

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow.

New claims 21-24 have been added.

Claims 1-24 are now pending in this application. Claims 8-14 and 16-20 have been withdrawn from consideration.

Rejection under 35 U.S.C. § 103

Claims 1-7 and 15 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 2,397,171 to Troller *et al.* (hereafter "Troller") in view of U.S. Patent No. 2,271,627 to Coppus (hereafter "Coppus"). This rejection is respectfully traversed.

The combination of Troller and Coppus does not render the duct fan of claim 1 to be unpatentable because the combination of these references does not disclose or suggest all of the features of claim 1.

Here, Troller and Coppus, alone or in combination, fail to disclose or suggest a duct fan comprising, among other things, a motor, an impeller, and "a distributor having a plurality of vanes which are adapted to contact the duct and form a connection between the duct and the motor, wherein the distributor forms a chamber that houses the impeller, wherein at least one vane includes an air-discharge duct configured to discharge air from the impeller chamber to outside of the duct," as recited in claim 1.

Troller discloses a fan and motor that includes a cast structure that forms an outer annular wall 10 and a central hollow shell 14 connected to the wall 10 by a plurality of vanes 13, a fan 22, and a fan hub 20. See Troller at col. 2, lines 25-55. The fan includes a duct arrangement that has an extension shell 23, a plurality of intake air ducts 25, and a cup 27. See Troller at col. 3, lines 5-10. Air enters extension shells 23 through intake ducts 25, passes through an interior of the hollow shell 14, and exits to the atmosphere through the back of the hollow shell 14 and the extension shell 23. See Troller at col. 3, lines 11-57, and Figure 1.

However, as noted on page 2 of the Final Office Action, Troller does not disclose or suggest a plurality of vanes “wherein at least one vane includes an air-discharge duct,” as recited in claim 1. Nor does Troller disclose or suggest such an air-discharge duct that is configured to discharge air from the impeller chamber to outside of the duct, as recited in claim 1.

Coppus discloses an induced draft blower that includes a base 1 with hollow legs 2 that are connected to a cylindrical shell 3 that surrounds a fan 4. See Coppus at col. 1, lines 44-48. Air for driving the motor is supplied through a pipe 19 extending through a hollow arm 2 so that the air travels through a channel 20’ and a chamber 20 in the base 1, a channel 21 in an end plate 10, a bore 21’ and exhaust ports 23 in a sleeve 8, openings 25 in a housing 6, and out from an annular space 26 between the housing 6 and a depending annular flange 27. See Coppus at col. 2, lines 12-42; Figures 1 and 2.

Coppus also discloses that the hollow legs 2 can circulate air through an annular chamber 50 and out a central opening 53 to cool a grease chamber 52 and that the cooling air is drawn inwards by a suction of the fan. See Coppus at col. 3, lines 44-64. Air can also flow from outside of the shell into a chamber 33 and then into an air passage 34 formed by a cylindrical shell 32 on an outer wall of a leg 2. See Coppus at col. 2, line 55, to col. 3, line 9.

Coppus, however, does not disclose or suggest a plurality of vanes “wherein the distributor forms a chamber that houses the impeller, wherein at least one vane includes an air-discharge duct configured to discharge air from the impeller chamber to outside of the duct,” as recited in amended claim 1. Instead, Coppus discloses that air to drive the motor is discharged from an annular space 26 enclosed by an annular flange 27 that blades of the fan 4 are attached to.

Furthermore, the cooling air for the grease chamber 52 and air flowing through the air passage 34 are not discharged from a chamber that houses an impeller because these air flows are separated from the fan of Coppus and any chamber that could house the fan of Coppus. Therefore, Coppus fails to remedy the deficiencies of Troller.

The Office argues on pages 2 and 3 of the Final Office Action that “configured to” language of claim 1 regards a desired result that is not structurally limiting. Applicant respectfully disagrees. This language regards a structure that is configured to discharge air from an impeller chamber to an outside of a duct, a structure that is not disclosed or suggested

by the combination of Troller and Coppus. Moreover, even if this language were not to be considered structural in nature, this language at least recites a function that the structure of the prior art must be capable of performing, which Troller and Coppus are not.

The Office argues on page 2 of the Office Action that the combination of Troller and Coppus would provide a vane that would be capable of allowing air to flow in either direction. However, the Office does not provide any basis in the prior art to support this assertion, which is understandable in light of the deficiencies of Troller and Coppus discussed above. The combination of Troller and Coppus would not provide such a vane. As noted above, Troller does not disclose or suggest such a vane. Coppus discloses that air is supplied inwardly through the pipe 19 of Coppus to drive a motor, which is then discharged from an annular space 26 enclosed by an annular flange 27. Coppus does not disclose or suggest how the air flow could be reversed, as argued by the Office, to flow through the annular space 26 and then be discharged through the pipe 19 while successfully driving the motor of Coppus. Coppus provides no structure to reverse the airflow or any suggestion that this can be done. Therefore, Coppus provides no teaching or suggestion that the air pipe 19 is configured to discharge air from an interior of the device of Coppus. Moreover, for at least the same reasons, Coppus does not provide any teaching or suggestion that the device of Coppus is capable of discharging air outwards through the pipe 19, as recited in claim 1.

Nor does Coppus disclose or suggest how air could flow through the central opening 53 to cool the grease chamber 52 and then be discharged outwardly through a hollow leg 2. Instead, Coppus discloses that suction created by the fan draws air inwards through the hollow leg 2 to cool a grease chamber 52. Furthermore, even if the fan could be reversed, the central opening 53 faces away from the fan of Coppus and is shielded by a plate 54, thus preventing the flow of air into the central opening 53 for discharge through the hollow leg 2. Thus, Coppus does not disclose or suggest that the hollow leg 2 is configured to discharge air, as recited in claim 1. Moreover, Coppus discloses that air is admitted into the chamber 35 and air passage 34 from outside of the shell 3 but does not disclose or suggest that this air flow can be reversed. For at least the same reasons, Coppus does not provide any teaching or suggestion that the device of Coppus is capable of discharging air outwards through the hollow leg 2, as recited in claim 1.

Further, Coppus discloses that the device can be placed in the stack for a boiler or a smoke stack. See Coppus at col. 1, lines 1-3, and col. 3, lines 23-28. One of ordinary skill in the art would understand that cooling air would need to be drawn from an outside of such a stack in order to effectively cool the grease chamber 52, as disclosed by Coppus, because one of ordinary skill would expect the air inside the stack to be at a higher temperature than the air outside the stack. Furthermore, because the grease chamber 52 is already exposed to the air inside the stack, the air inside the stack would provide little or no cooling effect because the grease chamber 52 would already be at a similar temperature to the air of the stack.

Thus, a modification to the structure of Coppus to draw air through the central opening 53 to cool the grease chamber 52 and then discharge the air through the hollow leg 2 would render the device of Coppus unsatisfactory for its intended purpose of cooling the grease chamber 52. See M.P.E.P. § 2143.01, Part V. Thus, the teachings of Coppus do not cure the deficiencies the deficiencies of Troller.

The Office also argues that claim 1 does not include any structure that would cause the air to flow outwardly or inwardly through a duct. However, Applicant notes that a claim may be worded broadly that language of claim 1 is sufficient to recite a structure, namely a vane that includes an air-discharge duct configured to discharge air, as recited in claim 1.

Therefore, Troller and Coppus fail to disclose or suggest all of the features of claim 1 for at least the reasons discussed above. As a result, the outstanding rejection does not properly apply to independent claim 1. Claims 2-7 and 15 depend from claim 1 and are allowable over Troller and Coppus for at least the same reasons as claim 1.

Reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

New claims 21-24 have been added. Claims 21-24 depend from claim 1 and are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

CONCLUSION

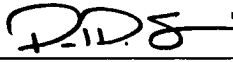
Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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